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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

PATEL, KIRAN B

ART UNIT

PAPER NUMBER

3612

DATE MAILED: 09/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/877,585

Applicant(s)

BASFORD, WILLIAM COLIN

Examiner

Kiran B. Patel

Art Unit

3612

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 September 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 1-4, 11, 12 and 14-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-10 and 13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restriction

1. Applicant's election without traverse of Species B Figs 8-13, claims 5-18, in Paper No. 6 is acknowledged.

Claims 1-4 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Species, there being no allowable generic or linking claim.

Further, Applicant elected only Fig 8 and withdrew the election of Fig 9-13 because Fig 9-13 contains different embodiments and elected claims 5-19 for prosecution. Applicant was informed that claims, which do not read on Fig 8, will be withdrawn from further consideration and rejoined at the time of allowance of this application.



Further, Claims 11-12, 14-18 were withdrawn by the Examiner from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Species.

Drawings

2. Applicant is required to submit a proposed drawing correction in reply to this Office action.

Specification

3. Applicant is advised on how to arrange the content of the specification.

Content of Specification

- (a) Title of the Invention: See 37 CFR 1.72(a). The title of the invention should be placed at the top of the first page of the specification. It should be brief but technically accurate and descriptive, preferably from two to seven words.
- (b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.
- (c) Statement Regarding Federally Sponsored Research and Development: See MPEP § 310.
- (d) Reference to a "Microfiche Appendix": See 37CFR 1.96(c) and MPEP § 608.05. The total number of microfiche and the total number frames should be specified.
- (e) Background of the Invention: The specification should set forth the Background of the Invention in two parts:

- (1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."
- (2) Description of the Related Art: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."
- (f) Brief Summary of the Invention: A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.
- (g) Brief Description of the Several Views of the Drawing(s): A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.
- (h) Detailed Description of the Invention: A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. This item may also be titled "Best Mode for Carrying Out the Invention." Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary for an understanding and

use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.

- (i) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet. (37 CFR 1.52(b)). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation. There may be plural indentations to further segregate subcombinations or related steps.
- (j) Abstract of the Disclosure: A brief narrative of the disclosure as a whole in a single paragraph of 250 words or less on a separate sheet following the claims.
- (k) Drawings: See 37 CFR 1.81, 1.83-1.85, and MPEP § 608.02.
- (l) Sequence Listing: See 37 CFR 1.821-1.825.

4. An examination of this application reveals that applicant is unfamiliar with patent prosecuting procedure. While an inventor may prosecute the application, lack of skill in this field usually acts as a liability in affording the maximum protection for the invention disclosed. Applicant is advised to secure the services of a registered patent attorney or agent to prosecute the application, since the value of a patent is largely dependent upon skillful preparation and prosecution. The Office cannot aid in selecting an attorney or agent.

Applicant is advised of the availability of the publication "Attorneys and Agents Registered to Practice Before the U.S. Patent and Trademark Office."

This publication is for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

5. Papers in an application which has received a filing date pursuant to 37 CFR 1.53 will not be returned for any purpose whatever. If applicant has not preserved copies of the papers, the Office will furnish copies at applicant's expense. See 37 CFR 1.19 for a list of the current fees.

6. If applicant continues to prosecute the application, revision of the specification and claims to present the application in proper form is required. While an application can be amended to make it clearly understandable, no subject matter can be added that was not disclosed in the application as originally filed.

7. New formal drawings are required in this application because existing drawings fails to clearly depict the invention as outlined in the specification. Applicant is advised to employ the services of a competent patent draftsman

outside the Office, as the Patent and Trademark Office no longer prepares new drawings.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11 & 12 14-18 w/drawn why considered? here

8. Claims 5-18, as best understood, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5, lines 1-3, "the fluid-dynamic base drag of a bluff body, having a substantially flat base surface, substantially normal to the longitudinal centerline of said bluff body" fails to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear what is claimed as invention because elected figure 8 contain a truck body not a bluff body. The truck body has six (sides) flat base surfaces not one. There is more than one surface, which is normal to the longitudinal centerline. It becomes even more confusing because the figures fail to show the fluid-dynamic base drag; a bluff body; a

substantially flat base surface substantially normal to the longitudinal centerline of the bluff body. "the longitudinal centerline" lacks antecedent basis in the Claim.

Claim 5, lines 4-7, "a plurality of vortex generators mounted in a cross stream array on the side, top and bottom surfaces of said bluff body, ahead of the trailing edges of said bluff body, to generate an array of counter rotating streamwise vortices in the passing boundary layer fluid" fails to recite the limitations of the claimed inventions. First, vortex generators are on one side or both the sides? What is stream array and is not shown in the figure 8. Trailing edges or the vortex generators at the bottom surfaces are not understood and not shown in the figure. It is not clear what is claimed by "an array of counter rotating streamwise vortices in the passing boundary layer fluid". "the passing boundary layer fluid" lacks antecedent basis in the Claim.

Claim 5, lines 8-11, it is not clear what is meant by "boattail plates of predetermined length, mounted substantially perpendicular to the base surface of the bluff body, and adjacent to and inset a predetermined distance from said trailing edges of said bluff body" and fails to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5, lines 12-16, "thereby providing greater fluid-dynamic base drag reduction than either of the two component methods when used alone, and reducing the optimum length of said shortened boattail plates for maximum base drag reduction to less than half the length required for maximum base drag reduction when full length boattail plates are used without said vortex generators" fails to particularly point out and distinctly claim the subject matter which applicant regards as the invention. "two component methods" lacks antecedent basis in the Claim.

Claim 6, lines 1-3, "the fluid-dynamic base drag of a bluff body, having a substantially flat base surface, substantially normal to the longitudinal centerline of said bluff body" fails to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear what is claimed as invention because elected figure 8 contain a truck body not a bluff body. The truck body has six (sides) flat base surfaces not one. There is more than one surface, which is normal to the longitudinal centerline. It becomes even more confusing because the figures fail to show the fluid-dynamic base drag; a bluff body; a substantially flat base surface substantially normal to the longitudinal centerline of the bluff body. "the longitudinal centerline" lacks antecedent basis in the Claim.

Claim 6, lines 4-6, "a plurality of vortex generators mounted in a cross stream array on the side, top and bottom surfaces of said bluff body, ahead of the trailing edges of said bluff body" fails to recite the limitations of the claimed inventions. First, vortex generators are on one side or both the sides? What is stream array and is not shown in the figure 8. Trailing edges or the vortex generators at the bottom surfaces are not understood and not shown in the figure.

Claim 6, lines 7-12, claim 10, lines 1-6, and claim 13, lines 1-8, it is not clear what is meant by "boattail plates of predetermined length, mounted substantially perpendicular to the base surface of the bluff body, and inset a predetermined distance from said trailing edges of the bluff body"; "plates intercepts the separated shear surfaces at the perimeter of the low pressure wake" and fails to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6, lines 13-17, "provides greater fluid-dynamic base drag reduction than either of the two component methods when used alone, and where the optimum length of said shortened boattail plates is reduced to less than half the length required for maximum base drag reduction when full length boattail plates are used without said vortex generators" fails to particularly point out and

distinctly claim the subject matter which applicant regards as the invention. "two component methods" lacks antecedent basis in the Claim.

Claim 9, line 2, "a rollup rear door" is not shown in the elected Fig 8 and it is not clear how the boattail plates would function along with a rollup rear door.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 5-10, 13, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Switlik '059 in view of Wheeler '837.

Regarding Claims 5-10, 13, as best understood, Switlik '059 discloses in Fig 1-17 the invention as claimed to include a bluff body 10, having a substantially flat base surface, substantially normal to the longitudinal centerline of said bluff body; boattail plates 28, 32, 36, 94 mounted substantially perpendicular to the base surface of the bluff body and adjacent to and inset a distance from said trailing edges of said bluff body; and swinging rear doors 20, 22.

However, Switlik '059 does not disclose a plurality of vortex generators.

Wheeler '837 discloses in Fig 4 a plurality of vortex generators 40.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device, as disclosed by Switlik '059, to include a plurality of vortex generators, as disclosed by Wheeler '837, to achieve the desire level of base drag reduction for the bluff body.

Conclusion

10. Applicant is requested to review and amend the specification and/or claims, without adding any new matter, as necessary to remove the indefinite language from the claims and particularly point out and distinctly claim the subject matter which applicant regards as the invention. This will allow the Examiner to understand the claims and complete the required search for the claimed limitations and prepare an Office Action for the Applicant.

11. The prior art made of record in attached Notice of Reference Cited (PTO-892) and not relied upon is considered pertinent to applicant's disclosure. This art of record shows various features similar to the applicant's invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kiran B. Patel whose telephone number is 703-305-0254. The examiner can normally be reached on M-F 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Dayoan, can be reached on 703-308-3102. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-3522 for regular communications and 703-308-3297 for After Final communications.



Kiran B. Patel
Primary Examiner
Art Unit 3612
September 20, 2002